

1           1.     An apparatus for decompressing video data, comprising:  
2                 a start code detector to convert a portion of a stream of video data into a  
3     stream of data tokens in response to detecting a start code sequence in said stream  
4     of video data; and  
5                 a pipeline having stages and being capable of decoding video data , the start  
6     code detector being coupled to send the data tokens to the pipeline.

1           2.     The apparatus of claim 1, wherein a plurality of the stages of said  
2     pipeline have operating modes responsive to the format of said tokens.

1           3.     The apparatus of claim 1, further comprising an inserter of search  
2     mode tokens to transmit search mode tokens into the stream of video data.

1           4.     The apparatus of claim 1, wherein the start code detector is capable of  
2     searching for video start codes complying with different formats.

1           5.     The apparatus of claim 4, wherein said formats include formats  
2     complying with at least two of the video standards selected from the group consisting  
3     of JPEG, MPEG, and H.261.

1           6.     The apparatus of claim 3, wherein the start code detector ignores video  
2     data until a video start code is found in response to receiving one of the search  
3     mode tokens.

1           7.     The apparatus of claim 1, further comprising:  
2     two-wire interfaces coupling the consecutive stages of the pipeline.

1           8.     The apparatus of claim 7, wherein the two-wire interfaces transmit data  
2     valid and data acceptance signals.

1           9.     The apparatus of claim 1, wherein the start code detector is adapted to  
2     introduce new tokens into the stream of video data at detected start code  
3     sequences.

1           10.    The apparatus of claim 2, wherein a portion of the stages of the  
2 pipeline reconfigure themselves to process data in response to receiving  
3 predetermined types of tokens.

1           11.    The apparatus of claim 9, wherein the start code detector introduces  
2 picture end tokens into the stream of video data.

1           12.    The apparatus of claim 1, wherein the start code detector is a hardware  
2 device.

1           13.    The apparatus of claim 1, wherein the pipeline includes:  
2 a Huffman decoder coupled to receive data from the start code  
3 detector;  
4 a token formatter coupled to data from the Huffman decoder;  
5 an inverse modeler coupled to receive data from the token formatter;  
6 and  
7 an inverse quantizer coupled to receive data from the inverse modeler.

1           14.    A method for decoding encoded video data, comprising:  
2 receiving a portion of a video data stream in a multi-stage pipelined decoder;  
3 inserting tokens into the received portion of the video data stream at least one  
4 of the tokens being a search mode token;  
5 detecting the search mode token in a special one of the stages; and  
6 searching for a start code token in the video data stream in response to  
7 detecting the search mode token in the special one of the stages.

1           15.    The method of claim 14, further comprising:  
2 making a random access into the data stream to receive the portion of the  
3 video stream; and  
4 wherein the search mode token is inserted in response to making the random  
5 access.

1 16. The method of claim 15, wherein the random access results from one  
2 of an error and a channel switch.

1 17. The method of claim 15, further comprising:  
2 reconfiguring stages of the decoder to decode video data in response to  
3 detecting the start code token.

1 18. The method of claim 17 wherein: searching recognizes start code  
2 tokens corresponding to video data encoded according to one of the standards  
3 MPEG, JPEG, and H.261.

1 19. A pipelined decoder for processing encoded video data, comprising:  
2 a pipeline having a plurality of stages for receiving and decoding a portion of a  
3 video data stream;  
4 a means for inserting tokens into the video data stream at least one of the  
5 tokens being a search mode token; and  
6 a start code detector to search for start code tokens in the video data stream  
7 in response to detecting the search mode token.

1 20. The decoder of claim 19, wherein the means for inserting inserts a  
2 search mode token into the data stream in response to making a random access into  
3 the video data stream.

1 21. The decoder of claim 20, wherein the random access results from one  
2 of an error and a channel switch.

1 22. The decoder of claim 20, wherein a plurality of the stages reconfigure  
2 themselves to decode video data in response a start code token.

1 23. The decoder of claim 22, wherein the start code token corresponds to  
2 video data encoded according to one of the standards MPEG, JPEG, and H.261.

1 24. The decoder of claim 20, further comprising:

2 a semiconductor substrate, the pipeline, means for inserting and start code  
3 detector being located on the substrate.

1 25. A system for decoding video data into picture frames, comprising:  
2 a start code detector to search for a start code sequence in a stream of video  
3 data in response to detecting a search mode token therein and to convert a portion  
4 of the stream of video data into data tokens in response to detecting a start code  
5 sequence in said stream of video data; and  
6 a decoder coupled to receive the data tokens from the start code detector and  
7 to decode the received data tokens into picture frames, the decoder capable of  
8 decoding multiple standards.

1 26. The system of claim 25, further comprising an inserter of search mode  
2 tokens coupled to insert search mode tokens into the stream of video data.

1 27. The system of claim 25, wherein the standards include two of JPEG,  
2 MPEG, and H.261.

1 28. The system of claim 25, wherein the decoder further comprises:  
2 a Huffman decoder;  
3 an inverse quantizer coupled to the Huffman decoder; and  
4 an inverse discrete cosine transformer coupled to the inverse quantizer.

1 29. The system of claim 25, wherein the decoder is a hardware device.